

REMARKS/ARGUMENTS

Reconsideration is respectfully requested of the Office Action of March 21, 2008.

A one-month extension of time, together with the associated fee, is filed herewith.

The claims in the case are: Claims 1, 4 to 7, 11, 12 and 14 to 20.

It is noted that the rejections of the claims under 35 U.S.C. 102(b) have been withdrawn as stated on page 2 of the Official Action of March 21, 2008.

The provisional rejection of Claims 1, 6, 7, 17 and 18 on the ground of non-statutory obviousness type double-patenting in view of Claims 2, 8, 9 and 14 to 16 of the co-pending application 10/522,903 has been noted. Deferral of this issue is requested until resolution of the patentability issue in this case.

The rejection of Claims 1, 4-7, 11, 12 and 14 to 20 under 35 U.S.C. § 103(a) as unpatentable in view of *Deller et al.*, U.S. 5,776,240, or *Ettlinger et al.*, U.S. patent 5,665,156, each taken with *Nargiello*, U.S. 6,193,795, is traversed and reconsideration is respectfully requested.

The *Deller* patent shows granules of silica which have been prepared by dispersing silica in water, spray drying and then optionally heating and/or silanizing. See the Abstract. The particles typically have an average particle size of 10 to 120 microns and are used for catalyst supports, according to *Deller*. Among the silanizing agents are compounds such as those mentioned in the present application.

The express limitation found in Claim 1 of this application that the pyrogenically produced silica is “structurally modified” is not shown by *Deller*. No structurally modified silicas of any kind are described by *Deller*. Persons skilled in the art understand that the term “structurally modified” silica is a term of art and means a silica that has been subjected to ball milling or equivalent means of structurally impacting the pyrogenically produced silica. This is noted on page 5, beginning at line 23 of this application.

In the Office Action of March 21, 2008, on page 6, third paragraph, it is admitted that the two principal references do not “specifically disclose” that the respective silicas are structurally modified. Applicants would add that not only do the references fail to “specifically” disclose structural modifications, but they do not even vaguely hint that the silicas are, or could be, structurally modified. The Second Declaration by Dr. Meyer unequivocally states the fact that neither *Deller* nor *Ettlinger* disclose structurally modified silicas; see page 2, lines 3 and 4. That fact is unrefuted in this record. And Dr. Meyer is a co-inventor on both *Deller* and *Ettlinger* so he is in a position to know that no structurally modified silicas are contemplated in *Deller* or *Ettlinger*.

In the “Response to Arguments” on page 7 of the Office Action of March 21, 2008, it is said that:

“The fact that Deller et al. ‘is concerned with establishing a certain pore size distribution’ and that Ettlinger et al. ‘is concerned with a product having a desired thickening effect’ does not detract the references from reading upon Applicants’ claims in their present form, as they each disclose silanised pyrogenically produced silicas.”

This suggests that the Examiner is still of the opinion that both *Deller* and *Ettlinger* anticipate the claimed invention, despite the fact that it has already been established that neither reference reads on or anticipates the present claims. Applicants submit that the reasons set forth on page 7 of the Official Action of March 21, 2008, sound as if the rejection under 35 U.S.C. § 102(b) is again being raised under the guise of a § 103 rejection. The evidence submitted by applicants is clear and unqualified that neither *Deller* nor *Ettlinger* disclose or suggest a destructured silica.

The Official Action on page 8 also challenges the Second Meyer Declaration on the basis that the Declaration is not “commensurate” in scope with the claimed invention. Applicants respectfully submit that this reveals a possible misunderstanding of the nature and purpose of the Second Meyer Declaration. The Second Meyer Declaration, as explained on page 2 thereof, points out the purpose of the work carried out by the inventors of the *Deller* patent and contrasts their work with the purpose intended by the inventors in the present case. Thus, the Second Declaration of Dr. Meyer is directed to showing the differences in the purpose of the respective inventions and does not address the scope of the claims. The Second Declaration of Dr. Meyer is relevant to the issue of motivation because the issue is: what would *Deller* have motivated the skilled worker to do? Dr. Meyer points out that the inventors in the *Deller* patent intended to make larger particles from smaller ones which larger particles would then have a higher bulk density and can be used without producing significant dust. Hence, the explanation by Dr. Meyer is offered to show that persons skilled in the art would not have been motivated to subject silica particles to ball milling. To ball mill the silica of *Deller* would have been contrary to the

intentions of the *Deller* inventors. Therefore, the Second Declaration of Dr. Meyer does not involve claim scope.

Instead of claim scope, the Second Declaration of Dr. Meyer is particularly relevant in respect of the issue of motivation; that is, Dr. Meyer points out what the *Deller* inventors' motivation was behind their invention.

Dr. Meyer explains on page 2 of his Second Declaration that applicants' process goes through the ball milling step to miniaturize the silica particles by destroying the aggregates of the primary particles. Dr. Meyer explains that *Deller* teaches away from the present invention because *Deller* makes larger particles from smaller ones. This represents essentially the reverse of what applicants do. Thus, applicants' motivation in the present case is to destroy aggregates of primary articles which is entirely different from what motivated the *Deller* inventors. Hence, because the Second Declaration of Dr. Meyer goes to the issues of motivation and explains that *Deller* teaches away from the present invention.

The Second Declaration is also relevant to the issue of *Ettlinger* teaching away from the present invention. Dr. Meyer explains, on page 3, the *Ettlinger* materials have low scratch resistance and are used for thickening agents. One skilled in the art would not subject the metal oxide of *Ettlinger* to structural modification based on *Ettlinger*'s teachings.

Lest there be an uncertainty as to what is meant in this art by the term "structurally modified", there has been made of record herein references showing that a "structurally modified" metallic oxide filler is distinctly different from a filler that has not been destructured, see *Nargiello, et al.*, U.S. 6,193,795, U.S. 2002/0077388, U.S. 5,959,005, U.S. 5,827,363 and

U.S. 7,144,930; as well as Canadian 2,240,759 and WO/2004/089816. All of these documents are further evidence of the well-recognized meaning of the term "structural modification" in the field of silica technology.

Ettlinger, also assigned to the same assignee as the present application, describes silanized, pyrogenically prepared silicas by spraying the silica first with water and then with a silane compound which typically has the formula $(RO)_3SiC_nH_{2n+1}$ in which n is from 10 to 18 and R is an alkyl group. *Ettlinger* shows that these products are used as thickening agents, as agents for improving pourability and also as reinforcing agents. See col. 1, lines 9 and 10 as well as col. 3, lines 13 to 19. This thickening effect is based on the characteristic feature of the *Ettlinger* silica that it agglomerates to larger clusters due to its agglomerated structure having gaps in the clusters.

However, *Ettlinger* does not disclose structurally modified silicas and, more particularly, structurally modified silicas in lacquers. It is noted that *Ettlinger* is mentioned in applicants' international publication (WO 2004/020531) on page 1, lines 8 to 22 and on page 11, lines 4-5, as the European equivalent EP 0 672 731; see para. [0003] and page 1, line 8 of this application.

The difference between the silicas according to *Ettlinger* (U.S. 5,665,156) and the silicas according to the present invention is that the silicas according to the invention are structurally modified after the silanization. Dr. Meyer also confirms that *Ettlinger* does not disclose structurally modified silicas; see page 3, first para. of the Second Declaration of Dr. Meyer.

Moreover, Dr. Meyer points out that the purpose of *Ettlinger* is entirely different from applicants herein because the reference is concerned with obtaining improved thickening effect.

One skilled in the art would, therefore, not subject the metal oxide to dry milling to obtain better thickening effect.

From the example beginning on page 11 of applicants' specification, paras. [0036], *et seq.*, one can see that the silica according to the invention shows no thickening effect but gives a good scratch resistance to lacquer coatings.

In the Comparative examples 2 and 2 shown in Tables 5, 6, 7, 8 and 9 of this application, silicas according to *Ettlinger* are used.

From the Table 7 on page 17, one can see that the silica according to *Ettlinger* (Comparative silicas 1 and 2) show a good thickening effect, but a low value for the scratch resistance. Dr. Meyer also confirms the thickening effect of the *Ettlinger* products; see page 3, second para. of Dr. Meyers' Second Declaration.

In contrast, the structurally modified silicas according to the present invention show a low thickening effect, but a good result for the scratch resistance. This is also confirmed by Dr. Meyer on page 3, para. 3. This difference in properties of the respective silicas could not have been predicted.

Applicants call attention to these comparative test results because they have not been acknowledged or discussed in the Office Action of March 21, 2008, and so they should not be overlooked.

Nargiello (also assigned to the present assignee) discloses, in col. 6, lines 1-3, the destructuring of pyrogenic hydrophilic/hydrophobic metal oxides with certain physical-chemical properties that are used for a reinforcing filler in certain rubber compositions, in sealants,

caulking compounds or adhesives. No teaching is found in *Nargiello* that destructuring silica, for example, would result in a filler being suitable for lacquer formulations, as for example defined in Claim 6 and Claim 17 herein.

In respect to the hydrophobizing agents for the metal oxide fillers, *Nargiello* refers to four U.S. patents (see col. 6, lines 23 to 28) as showing suitable agents for rendering fillers hydrophobic. These U.S. patents disclose the hydrophobizing agents as follows:

U.S. 4,307,023 (*Ettlinger*) uses silicon oil, only (see col. 10, Claim 2). According to the present invention, no silicon oil is used or claimed.

U.S. 3,924,029 (*Schütte*) uses organohalosilane which is a mixture comprising monomethylchlorosilane, dimethylchlorosilane and trimethylchlorosilane (see col. 10, Claim 4). These silanes do not fall within the scope of the claims.

U.S. 4,503,092 (*Klebe*) uses dimethyldichlorosilane only (see col. 4, Claim 2) and this silane does not fall within the scope of the present claims.

U.S. 4,326,852 (*Kratel*) does not disclose any hydrophobic silica at all.

Thus, *Nargiello* would not direct persons skilled in the art to the structurally modified pyrogenically produced silicas as defined in Claim 1 or the process for making same defined in Claim 4 or for incorporation into lacquer compositions or to select the silanes defined in applicants' claims herein in order to obtain a filler exhibiting improved scratch resistance in lacquers.

Even if *Nargiello* were to be combined with the principal references the combination would not create *prima facie* obviousness of the subject matter claimed herein.

There is no reason presented in the record herein why a person skilled in the art would select the structurally modified filler of *Nargiello* but at the same time change the silanes to the two that are defined by applicants' claims and to replace the completely different fillers of *Deller* and *Ettlinger*.

The Official Action alleges on page 7 that it would have been obvious to "...modify the teachings of either *Deller, et al.* or *Ettlinger, et al.* by performing the additional dry milling process of *Narziello, et al.* and thereby obtain Applicants' invention".

However, the Office Action does not contain any explanation as to why it would have been obvious to subject the materials of *Deller* or *Ettlinger* to "additional dry milling". There is nothing in *Nargiello* to suggest that the materials of *Deller* or *Ettlinger* would be improved in some specific way by subjecting those substances to additional dry milling.

Deller is concerned with establishing a certain pore size distribution. Additional milling would not be consistent with the achievement of that goal. *Ettlinger* is concerned with a product having a desired thickening effect. Milling that product would not suggest that the described thickening effect would necessarily be maintained.

Indeed, in his Second Declaration, Dr. Meyer says that *Nargiello* would not lead him to subject the *Deller/Ettlinger* materials to structural modification.

Applicants respectfully submit that the aims and goals of *Deller/Ettlinger* are clearly focused on the methods described in those two patents whereby those aims and goals are achieved. To suggest that a person skilled in the art would go contrary to the intentions of *Deller* and *Ettlinger* and subject those substances of *Deller/Ettlinger* to a dry milling finds no support in

these references and moreover, is lacking in any reasoned explanation to support that suggestion.

Moreover, it would be contrary to what Dr. Meyer has explained in his Declaration.

Attention is also invited to the evidence of record herein, going to the issue of unexpected results.

The application has ample data showing that the silanised, structurally modified, pyrogenically produced silicas defined by applicants' claims, when incorporated into lacquers, impart a substantial improvement in scratch resistance to the lacquered surface; see page 18, first para. The results are also shown in Table 8 on page 20 and are of special relevance to Claims 6, and 17-19. These beneficial results could not have been predicted from the combination of references.

First of all, neither *Deller* nor *Ettlinger* are directed to lacquer compositions and, therefore, if a person skilled in the art were interested in improving scratch resistance of lacquers, *Deller* and *Ettlinger* would not provide any useful information and would not be viewed as relevant prior art.

Secondly, even if *Nargiello*'s destructured silicas were to replace the silicas of *Deller* or *Ettlinger*, the result would not produce lacquer compositions because neither of the principal references disclose lacquer compositions.

Clearly, the lacquer compositions of Claims 6, 17 and 18 are not rendered *prima facie* obvious by the combination of references.

Filed herewith is a Third Declaration of Dr. Meyer. In this new document, Dr. Meyer explains that structural modification is important in being able to impart improved scratch resistance properties to lacquers. In addition, Dr. Meyer explains that it was not anticipated or expected that the silicas of *Ettlinger* would exhibit DBP values comparable to the DBP values of the silicas of this invention. Further, the scratch resistant properties shown by lacquers formulations containing the silicas of this invention were not foreseen.

The three Declarations by Dr. Meyer are believed to respond to all the issues raised in the various official actions from the US PTO. None of these Declarations has been refuted. Therefore the balance of evidence is in applicants' favor. And as a result the claims should be allowed.

Favorable action at the Examiner's earliest convenience is respectfully requested.

Respectfully submitted,

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